

IN THE CLAIMS

Please amend the claims as indicated.

1. (Currently Amended) An air distribution system for a forced hot air drying unit for drying inks, paints or coatings comprising:

a housing having at least one orifice chamber, an inlet cavity, a baffle, air passages, ~~a and~~ and a series of orifices allowing air to pass from said orifice chamber to the exterior of said housing of said air distribution system, said baffle arranged to distribute air from said inlet cavity to said air passages, said series of orifices sized to provide an air impingement on a substrate to be dried;

an internal construction capable of accepting an electrical heater which allows heat to be efficiently conveyed from said electrical heater through said internal construction to the air as the air passes from said baffle to said orifices;
and

an electrical heater mounted within said internal construction of said housing of said air distribution system.

2. (Currently Amended) A forced hot air drying unit for drying inks, paints or coatings where all dryer components are located in a single enclosure comprising:

a means for receiving pressurized air;

a means for receiving electrical power;

a plurality of air distribution systems mounted within said single enclosure, wherein each distribution system is connected to said means for receiving

pressurized air and said means for receiving electrical power, wherein each distribution system receives, heats, and disperses said pressurized air;

a means of controlling the flow of said pressurized air passing through said air distribution systems, including an air flow ~~regulator~~, regulator, and

a means of controlling the temperature of the air passing through said air distribution ~~system(s)~~ systems, including a modulating power electronic temperature controller.

3. (Previously Presented) A means of monitoring the effective temperature of a forced hot air drying unit for drying inks, paints or coatings comprising:

a thermocouple mounted to a thermal conducting slide plate in contact with the materials being dried;

the thermocouple mounted in a location where the material being dried has already been exposed to the majority of the resident time of the drying unit;

the thermocouple being capable of attaining the temperature of the material being dried.

4. (Previously Presented) The air distribution system of claim 1 in which said heater comprises a solid cartridge heater that comprises a selectable material composition, diameter, length and wattage.

5. (Canceled)

6. (Previously Presented) An air distribution system for a forced hot air drying unit for drying inks, paints or coatings comprising:

a housing with an air inlet port to allow air to enter said housing, an internal cavity, and a plurality of orifices formed through a wall of said housing to allow air to pass from said internal cavity to the exterior of said housing;

a heater mounted within said internal cavity of said housing; and

a baffle within said internal cavity for distributing air along the length of said heater.

7. (Previously Presented) An air distribution system according to claim 1, wherein said baffle comprises a plurality of baffle orifices spaced apart along a length thereof.

8. (Previously Presented) An air distribution system according to claim 7, wherein said baffle orifices are variably sized to ensure an even air flow along the length of the air passages.

9. (Previously Presented) An air distribution system according to claim 8, wherein said electrical heater comprises a solid cartridge heater.

10. (Previously Presented) An air distribution system according to claim 1, wherein said electrical heater comprises a solid cartridge heater.

11. (Previously Presented) An air distribution system according to claim 1, wherein said internal construction comprises a serpentine structure that defines said air passages and provides an extended heat transfer surface between said heater and said air passages.

12. (Previously Presented) An air distribution system according to claim 1, wherein said baffle comprises a plurality of baffle orifices spaced apart along a length thereof;
wherein said electrical heater comprises a solid cartridge heater; wherein said internal construction comprises a serpentine structure that defines said air passages and provides an extended heat transfer surface between said heater and said air passages.

13. (Previously Presented) An air distribution system according to claim 12, wherein said solid cartridge heater is elongated along an axis and said air passages are arranged such that a flow of air through said air passages is in a substantially perpendicular direction to said axis.

14. (Previously Presented) A forced hot air drying unit according to claim 2, wherein each said air distribution system comprises an elongated housing having an air inlet, an air outlet in the form of a plurality of orifices oriented for

directing air onto a substrate to be dried, and at least one air passage between said air inlet and said air outlet; and

a solid cartridge electrical heater within said housing.

15. (Previously Presented) A forced hot air drying unit according to claim 14, comprising a heat exchanger having a central channel for receiving said solid cartridge heater and an extended heat transfer surface comprising fins that in part define said at least one air passage.

16. (Previously Presented) A forced hot air drying unit according to claim 14, comprising an extended heat transfer surface between said solid cartridge heater and said at least one air passage, and wherein said housing air inlets of said plurality of air distribution systems are connected by a manifold within said single enclosure, said single enclosure having a single air inlet connection connected to said manifold.

17. (Previously Presented) An air distribution system according to claim 6, wherein said baffle comprises a plurality of baffle orifices spaced apart along a length thereof.

18. (Previously Presented) An air distribution system according to claim 17, wherein said baffle orifices are variably sized to ensure an even air flow along the length of the air passages.

19. (Previously Presented) An air distribution system according to claim 6, wherein said heater comprises a solid cartridge electrical heater.

20. (Previously Presented) An air distribution system according to claim 6, wherein said internal cavity forms a serpentine structure that defines at least one air passage between said inlet port and said orifices and provides an extended heat transfer surface between said heater and said air passage.